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Three species excluded from *Melanopsamma* (*Ascomycetes*)

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Abstract— *Melanopsamma* is a unitunicate ascomycete genus. However, examinations of the holotypes of *M. aggregata*, *M. merrillii*, and M. *pomiformis* var. *monosticha* has revealed that all were bitunicate. They are synonyms of *Astrosphaeriella africana*, *Didymosphaeria dimastospora*, and *Keissleriella sambucina*, respectively.

Key words— morphology, mycology, taxonomy

Introduction

Melanopsamma Niessl ex Sacc. is a unitunicate ascomycete genus. As currently recognized, its main characters are superficial ascomata that are ostiolate, glabrous, and collabent when mature; reddish brown, 2- or 3-layered peridia; unitunicate, cylindrical, paraphysate, 8-spored asci; and ellipsoidal or fusiform, hyaline, 1-septate ascospores.

Of the approximately 110 *Melanopsamma* species names listed in Index Fungorum (2010), only 41 species are accepted in the genus (Kirk et al. 2008). To date, nine taxa have been transferred to other genera (Index Fungorum 2010), leaving about 80 names that are either synonyms or probably do not belong in the genus.

Most of the excluded species are bitunicate ascomycetes. The concept of bitunicate/unitunicate asci was not introduced until 1951 (Luttrell 1951). Before 1951 *Melanopsamma* included bitunicate taxa, which were otherwise very similar to unitunicate *Melanopsamma* species. The same situation occurred also with the unitunicate genus *Amphisphaeria* (Wang et al. 2004), in which earlier authors described many bitunicate taxa. There is no world monographic study on *Melanopsamma*.

In this paper, we exclude three bitunicate *Melanopsamma* species from the genus and reallocate them based on re-examination of their type specimens.

Materials & methods

Type specimens were borrowed from BPI, YAM and W. Dried material was rehydrated in water and fruiting structures were observed using a Zeiss 2000-C dissecting microscope. Slides of ascospores, asci, and sections of ascomata mounted in water were examined, photographed, and measured using a Zeiss Axioplan II image microscope.

Taxonomy

Astrosphaeriella africana D. Hawksw., Sydowia 38: 116.1986 ['1985']. Figs 1–2.

= *Melanopsamma aggregata* I. Hino & Katum., Bull. Fac. Agric. Yamaguti Univ. 6: 53.1955.

Specimen examined: **Japan**, Sakaedani, Tokuyama, on dead stems of *Phyllostachys bambusoides* Siebold & Zucc. (*Poaceae*), 28 November 1954, I. Hino, YAM 20365, holotype of *Melanopsamma aggregata*.

Ascomata immersed, erumpent, arising singly in the substrate, 650–900 μm diam., hemispherical, black, base applanate, with a central papilla (Fig. 1). Asci bitunicate, 135–160 × 12–17 μm, 8-spored, cylindrical. Ascospores 50–57 × 5.5–6.5 μm, 2–3-seriate, fusiform, pale yellowish brown, 1-septate, constricted at the septum, with longitudinal wall striations (Fig. 2).

Didymosphaeria dimastospora Sousa da Câmara, Agron. lusit. 13: 123. 1951. Figs 3–4.

= *Melanopsamma merrillii* H.S. Yates, Philipp. Journ. Sc. 12: 376. 1917.

Specimen examined: **Philippines**, Alabat Island, substrate undetermined, 21 December 1916, E.D. Merrill 10554, BPI 612151, holotype of *Melanopsamma merrillii*.

Ascomata bitunicate, 400–600 μm diam., globose, erumpent (Fig. 3). Ostiole raised, lateral. Pseudoparaphyses filaments 1–1.5 μm wide. Asci 100–135 × 9–12 μm. Ascospores ellipsoidal, grey, 17–22 × 6–9 μm, often widened at the septum, 1-septate, cells equal, without ornamentation, but sometimes with brownish gel at the poles (Fig. 4).

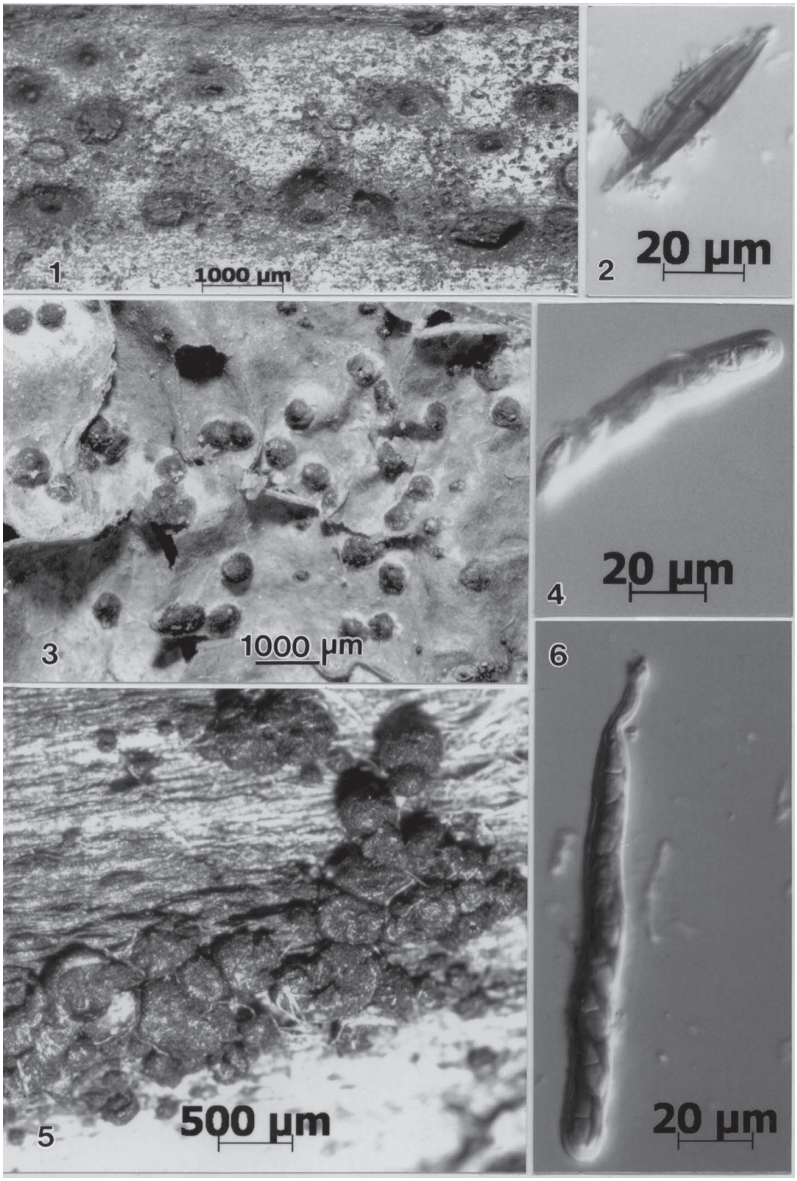
Notes: *Didymosphaeria* Fuckel was monographed by Aptroot (1995), who accepted seven species out of 550 named taxa. The excluded taxa belong to other similar genera, which are bitunicate or unitunicate ascomycetes.

Keissleriella sambucina (Rehm) Höhn., Sitzungsber. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl., Abt. 1, 128: 582. 1919. Figs 5–6.

= *Melanopsamma pomiformis* var. *monosticha* Keissl., Beih. Bot. Centrlbl., Abt. II, 29: 400. 1912.

Specimens examined: **Slovenia**, Carniola, on dry branch of *Sorbus aria* (L.) Crantz (*Rosaceae*), July 1908, leg. & det. K.V. Keissler, W 1908/9129, holotype of *Melanopsamma pomiformis* var. *monosticha*. **Austria**, Ybbsitz, on *Cydonia japonica* Pers. (*Rosaceae*), March 1909, W 1939/0113, [as Melanopsamma *amphisphaeria* Schulzer & Sacc.]

Ascomata subglobose, semi-immersed to superficial, gregarious to crowded, black, 300–500 μm in diam., 300–450 μm in height (Fig. 5). Ostiole papillate



Figures 1–6. Figs 1–2: *Astrosphaeriella africana* (from holotype of *Melanopsamma aggregata*): 1—habit of ascomata on host surface; 2—ascospores. Figs 3–4. *Didymosphaeria dimastospora* (from holotype of *Melanopsamma merrillii*): 3—habit of ascomata on host surface; 4—intact ascus, ascospores. Figs 5–6. *Keissleriella sambucina* (from holotype of *Melanopsamma pomiformis* var. *monosticha*): 5—habit of ascomata on host surface; 6—ascus, ascospores.

with short, blackish brown setae, not collabent. Pseudoparaphyses trabeculate. Asci bitunicate, cylindrical, 8-spored, 110–140 × 11–13 μm (Fig. 6). Ascospores 16–20 × 6–8 μm, hyaline, ellipsoidal, asymmetrical with upper hemispore wider and more obtuse than lower, 1-septate, wall smooth, constricted at the septum (Fig. 6).

Key to the genera

1a. Ascomata collabent when mature, asci unitunicate ..... *Melanopsamma*
1b. Ascomata not collabent, asci bitunicate 2
2a. Ascomata gregarious to crowded, ascospores ellipsoidal or fusiform, 1–multi-septate ..... *Keissleriella*
2b. Ascomata scattered 3
3a. Ascospores 1-seriate, ellipsoidal, 1-septate ..... *Didymosphaeria*
3b. Ascospores 2–3-seriate, elongate-fusiform, 1–5-septate ..... *Astrosphaeriella*

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